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A school's educational objective should include three major types of goals for each individual: (1) Preparation for an appropriate occupational role, (2) preparation for the responsibilities of citizenship, and (3) preparation for enjoying leisure activities. Previous efforts to individualize education have been relatively ineffective. An example of current efforts to both broaden and individualize educational outcomes is Project PLAN, whose goals include the student's personal formulation of goals and plans, with each student given full responsibility for his development. The State of Pennsylvania is attempting to collect in a systematic fashion data required to define educational outcomes. Two other studies, an American Institutes for Research study and Project TALENT, were conducted to develop methods for evaluating the attainment of educational outcomes. To improve the quality of their educational program, school administrators should make intensive case studies of samples of students, including the following items: Community environment, home environment, personal history, personal activities, school experience, personal characteristics, and personal plans. (HW)

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DEFINING EDUCATIONAL OUTCOMES FOR TODAY'S SCHOOLS AND ASSESSING THEIR ATTAINMENT

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There is a growing conviction among educational administrators that American education is on the threshold of an era of improved quality in student development. Two very attractive resources which seem likely to play a large role in the new educational programs are educational technology and the individualization of instruction. However, recent memories of the extravagant promises made for educational television, teaching machines, and programmed learning, and the deflation following early tryouts of these tools have given the administrator greater caution in evaluating proposals which will make possible this big forward step. Even though education lacks the types of data which would permit the sound application of systems analysis approaches to educational planning and decision-making, the recognition of the need for the systematic study of inputs and outputs and a careful evaluation of the alternatives is beginning to provide the framework for developing a new educational program.

DEFINING EDUCATIONAL OUTCOMES - A FIRST APPROXIMATION

Until the early part of this century, the function of elementary education was to give students a command of the basic skills. The function of the secondary schools was to prepare students for college. Only a very small percentage of young people were enrolled in secondary schools. During the past fifty years as the function of education changed, there have been numerous efforts to define the desired educational outcomes. Each new committee or commission has chosen some specific aspect of educational development as its main emphasis. Although the evolution of these statements of educational objectives or goals has been slow, it is believed that in recent years there has been general agreement that the focus of the schools should be broadened to include three major types of goals for each individual. These goals are: (1) to assist him to plan and prepare for an appropriate occupational role; (2) to prepare him for the responsibilities of citizenship including his personal and social development; and (3) to emphasize those aspects of general education which will help him find deeply satisfying activities for the anticipated increased time available for leisure and recreation.

Along with this broadening of the definition of educational outcomes, there has been an increasing awareness that previous efforts to individualize education have been relatively ineffective. Homogeneous grouping, the various track plans, and special enrichment programs have not provided each individual student with that education which is most appropriate to his needs and goals.

An example of current efforts to both broaden and individualize educational outcomes is provided in terms of the goals of Project PLAN (A Program for Learning in Accordance with Needs). The six main goals of this program which are formulated in terms of an individualized approach to education are the following: (1) Personal formulation of goals and plans. This includes acquainting each student with the extent to which he has developed his potential abilities, his interests and preferences, his personal and social behavior

patterns, and his skills in making decisions. The successful attainment of this goal also requires the acquisition of knowledge about roles, activities, and opportunities in occupations, leisure time activities and social and citizenship roles. On the basis of his knowledge of the extent to which his potential abilities have been developed and his knowledge of the requirements of various roles and activities, his most important purpose is to formulate individual goals and specific plans for attaining these goals. In the past, the educational program has primarily told the individual to set high goals for himself and develop high aspirations without suitable procedures for informing him of his own unique talents or giving him any real information about the requirements for the roles and activities which might be open to him. On the basis of the data from the Five Year Follow-up findings from Project TALENT, it is now possible to provide each student with a sound basis for making his personal decisions.

(2) Personal development. This includes (a) personal adjustment to difficult situations, including frustrations and failures; (b) responsibility and effort in carrying out assigned or agreed upon tasks; (c) creativity and initiative when faced with an unexpected situation or a special need; and (d) integrity with respect to personal behavior, statements, and the property of others. This also has been an area seriously neglected by current educational programs. It is proposed to collect observations of specific behaviors in the form of critical incidents on these types of development and to use this as a basis for correcting ineffective behaviors and reinforcing and encouraging effective behaviors in this area.

(3) Social development. This also includes four main types of behavior: (a) social adjustment as shown by helping and sharing with others; (b) sensitivity to others including kindness to persons with special handicaps or problems, respecting their race or religion though different from one's own, and seeing that others are not left out; (c) group orientation including contributions to group activities, good sportsmanship, and similar activities placing group before personal interests; and (d) adaptability to rules and conventions including following rules even when this is unpopular, showing good taste and manners in difficult situations, and complying with specific instructions. This also has been a neglected area. The program proposes to use the same type of procedures in social development as were mentioned in the preceding paragraph on personal development.

(4) Developing basic skills and abilities. This includes some of the more important long-range objectives of education: namely the ability to read with comprehension, the ability to express one's self, and the ability to think and reason correctly on various types of issues. Although this has been the basic function of traditional education, it is believed that an individualized educational program making full use of technological and audio-visual aids, can greatly improve the efficiency and effectiveness of these developmental programs. A very important aspect of developing basic skills and abilities is to communicate effectively to the student his current level of ability and information as to the practical implications of this level of development in terms of those important tasks which he can carry out successfully and those which will require a greater development of his basic skills and abilities. It is proposed that this be done by interpreting his performance on test materials in terms of their equivalents in these practical, important tasks and activities.

(5) Acquiring knowledge, concepts, principles, and skill in applying these to new problems. This includes much of the content of traditional instruction. Emphasis is on the concepts and principles and their application rather than on specific items of knowledge which are not basic to these larger units of understanding and application. Much of the emphasis in traditional education has been on specific items of information rather than concepts and principles and their application in new situations. The information explosion has made it quite impossible for today's students to learn all of the important items of information in a given area of knowledge.

(6) Management of individual development. The first of these goals is focused on the personal formulation of goals and plans. This last goal focuses on a personal program for the management of individual development which is essential for carrying out the various educational and developmental activities included in the four preceding paragraphs. This goal is to make the individual a relatively independent and responsible manager of his own education and development. Present educational programs give the student very little responsibility in this area. This goal cannot be achieved by merely telling the student he has the responsibility and should proceed to manage his development. It will require a systematic and carefully monitored program to convey to the student increased responsibility aiming at his taking full responsibility for his development. The success in achieving this goal will be evaluated in terms of the student's demonstrated ability to carry out his program independently of the teacher and his parents. However, it is not necessary to wait to see whether or not he has assumed responsibility and is effectively managing his program for development as a whole. Both the initial goal and this last goal can be evaluated by developing specific standardized assignments to plan and carry out one particular short-term developmental task.

NEEDED RESEARCH IN DEFINING EDUCATIONAL OUTCOMES

It has long been recognized that many types of information are essential to defining educational outcomes. In E. F. Lindquist's Educational Measurement, published in 1951, Ralph W. Tyler suggests that studies of learners, studies of the demands of life outside the school, the views of subject matter scholars and philosophers, and studies of the psychology of learning are necessary as an appropriate base for formulating educational objectives. Too often, however, no systematic efforts are made to collect these types of data. Most statements of educational objectives have been developed by committees and commissions who meet over a period of weeks or months and discuss among themselves . . . what the most appropriate educational outcomes for today's students are. A second omission is that they rarely discuss the problem of the varying needs for individuals having different talents.

Recently, one effort has been initiated to collect in systematic fashion, some of the types of data required to define educational outcomes. In the State of Pennsylvania, fifteen local school districts, working under the leadership of Raymond Bernabei and Donald Wright have undertaken a three year project with substantial support from the Federal Government to define, clarify, and improve the goals for quality education in Pennsylvania. One of the studies involves the collection of critical incidents from teachers at the fourth, eighth, and twelfth grade levels. These incidents would report observations by the teacher of a specific

behavior by the student indicating achievement or failure to achieve one of the ten specific goals of quality education proposed by a previous study. For example, one of these goals is that each child should acquire the greatest possible understanding of himself and an appreciation of his worthiness as a member of society. The teachers are being asked for specific incidents in which a child clearly indicated that he appreciated or failed to appreciate his worth as a member of society. From several hundred such incidents it is believed that it will be possible to obtain a more precise definition of this goal of quality education.

A second type of incident will be obtained in which a teacher behavior led directly to a change in student behavior, such as acquiring a skill or changing an attitude or way of behaving in a specific situation. An example of this type is a report by the teacher of a specific thing that he or she did which produced an observed change in a student's attitude towards school and learning as shown by his behavior in a specific educational situation.

Another type of data collection will involve the intensive study of individual cases with special reference to the educational needs of these individuals. At several educational levels and also for a group who have completed their formal schooling, a systematic record of the background and development of each of several thousand students will be obtained from the students' teachers and parents.

Using these types of data, it is proposed that explicit rationales be developed for specifying the design of assessment programs for the various goals of quality education. Such explicit rationales consist of three parts: first, the definition, description, and delimitation of each educational objective. These would be based primarily on the critical behavior categories formulated from the critical incidents. Second, an analysis of this behavior in terms of its nature and probable determiners would be undertaken. Third, specifications for the types of assessment procedures which will determine whether or not the goals have been achieved would be drawn up.

Supplementing these data with the results from other studies of the conditions of learning and the requirements for various roles and activities, it is proposed that committees of teachers, subject matter specialists, scholars, philosophers, and community leaders formulate a detailed definition of educational outcomes and procedures for assessing these.

It is believed that the data from the intensive case studies would also provide the basis for developing some principles for individualizing education. Many possible educational goals are desirable, but for a particular individual with limited time and a specific ability to learn, only goals which are most important for achieving the educational development essential for the life goals and plans which he has formulated should be included. It is very likely that in many instances greater emphasis on the basic skills such as reading comprehension and effective oral and written expression are of much greater importance than the learning of many of the items in our cultural heritage. The effort of the Pennsylvania study is to develop a comprehensive set of educational objectives which include appropriate subjects for each of our young people. The changing society and technological and scientific advances together with the expected increase in understanding of human learning processes will undoubtedly require that these objectives be in a constant state of revision and modification. However, the time is very much overdue to make a substantial systematic effort to collect the necessary data to define a broad program of educational outcomes to be made available by American schools.

APPROACHES TO EVALUATING THE ATTAINMENT OF EDUCATIONAL OUTCOMES

In a recent study conducted by the American Institutes for Research in a small Eastern city, a number of new procedures were used in evaluating the educational development of individual students. In each of Grades 4, 6, 8, and 12 a 10% sample of the students was selected in such a way as to be representative of the total group of students for each of these classes in terms of learning ability. For the students in the sample, various types of data were collected. These included the pertinent information in the cumulative record for each of the students; information regarding their school program which was collected by questionnaire for Grades 6, 8, and 12 students and by interview from the Grade 4 students; consultations with teachers and specialists regarding some of the students' problems; and an interview with each student by the evaluator.

On the basis of all the data obtained, the evaluators answered several questions regarding the educational program. One of these questions was, "What is the quality of student motivation for learning?" For the four classes combined the evaluators rating of the motivation for learning was outstanding or excellent for about 30% of the students and fair or good for 60% and poor or very poor for 10%. It is interesting to note that there was a definite downward trend in motivation on the part of the students in the judgment of these evaluators. For example, in the fourth grade, 41% of the students were rated as having excellent or outstanding motivation, while in the twelfth grade, only 12% of the students were rated as having excellent or outstanding motivation for learning. Other evidence suggests that this finding would be duplicated in most schools throughout the country.

The evaluators were also asked to indicate the overall effectiveness of the school in meeting the needs of children in education and guidance. The evaluators reported that the schools were meeting the needs of the students "nearly perfectly" for 25% of the students, "in most respects" for 49% of the students, "well in some respects and poorly in others" for 22% of the students, and either "fairly unsatisfactory" or "very poorly" for 4% of the students. The unsatisfactory evaluations were given for such reasons as schools having failed to detect a severe visual handicap, misplacement of the student, failure to provide psychological assistance, lack of remedial instruction in the early grades, and lack of personal counseling.

Although student evaluations are questionable in some respects, it seemed worthwhile to ask these students whether the instruction in a particular class made them want to learn more or not want to learn more about the subject than was required in the course. In replying to this question at the ninth grade level, the only subject in which close to half the students felt the instruction made them want to learn more was science. The subject making the poorest showing in this respect was English where less than one in five indicated that they were motivated to learn more than was required.

In addition to studying a sample of the students in schools, it was believed that useful evaluative information could be obtained from recent graduates. All of the students who had graduated in the class of 1960 and 1964 in the high school in this system were sent questionnaires in the summer of 1965. With the aid of reminders and further follow-ups over the next six weeks, 84% of the 753 members of the class of 1964, and 72% of the 429 graduates in the class of 1960 returned complete questionnaires. These high rates of return,

plus the consistency of the findings in the two classes indicate considerable reliance can be placed on the findings reported. One of the items on the questionnaire asked students to complete the sentence, "The best thing provided for me by this high school was _____." In both classes the most frequent responses were, "a good basic education," and "good preparation for college." In both classes another frequent response was "good competent interested teachers."

Another item in the questionnaire asked that they complete the sentence, "The main thing I believe I needed which was not provided by this high school was _____." Approximately 25% of the students in each class indicated that "guidance and counseling" was the most important unfilled need in their high school education. The only other item which was indicated as a need by an appreciable proportion of the students in the two classes was "assistance in learning how to study." The other replies were scattered over a wide variety of needs.

These graduates were asked to provide an overall evaluation of the preparation they received in the schools by answering the following question, "Immediately following graduation from high school, how well do you believe you were prepared to enter into your new role as a paid worker or student?" About 30% of each of the classes indicated that they were very well prepared; 45% in each class indicated they were fairly well prepared; the remaining 25% in the two classes indicated they were generally prepared, but lacked some specific or they were not well prepared.

On the basis of a systematic study of all available data from the students and observations and studies of the curriculum and staff, it was recommended that the greatest improvement in the school program could be expected from focusing on the two concepts of individualization of education and formulation of realistic goals and plans by each student to prepare himself for important life roles.

Some of the data from Project TALENT, a survey of more than 400,000 secondary school students conducted in 1960, also provide evaluative data for this country's educational program. An indication of their lack of knowledge with respect to themselves and various career opportunities is shown by the fact that the career plans reported by boys one year out of high school remained the same as those they expressed in the tenth grade for only 19% of them and were the same as those given a year earlier in the twelfth grade for only 31%. For the girls the numbers having the same plans one year after graduation were 29% when compared with Grade 10 plans and 41% for the Grade 12 plans.

Evidence of the ineffectiveness of much of the current instructional material was also provided by Project TALENT. The students were asked to answer the question, "How often do you read material over and over again without really understanding what you have read?" Sixteen percent of the boys and 17% of the girls in the twelfth grade reported that this happened to them most of the time. In this twelfth grade group, an additional 18% of both the boys and the girls reported that this happened about half the time. Thus we have the clear indication that for more than a third of our boys and girls in the twelfth grade, the textbooks are so difficult that half or more of the time they are unable to understand what they read. Or conversely, their instruction in understanding what they read has been deficient in preparing them for reading materials appropriate to this level.

Although the methods of evaluating the attainment of educational outcomes are definitely in need of improvement, it is clear that information is already available to indicate a number of the deficiencies of current educational programs and suggest ways of improving them.

SUGGESTIONS FOR SCHOOL ADMINISTRATORS AND SUPERVISORS

It is proposed that the best type of study for the school administrator and supervisor to undertake to provide a basis for improving the quality of their educational program is to make intensive case studies of a sample of students. These studies should be focused on the educational development of the student and the appropriateness of the educational program for assisting him in this development. Such an intensive study of individual needs should include the following types of items:

(1) Community environment. This would include something about the adult occupations in the community, the level of education of the adults in the community, the type and quality of housing, the recreational opportunities, social opportunities, library and cultural opportunities, work opportunities especially part-time and summer opportunities for student work, and the size and the type of the community.

(2) Home environment. This would include such items as living quarters, their type and quality, the father's and mother's occupation, the parent's education, the family recreational activities, the family cultural opportunities, the family chores done by the children, the personal living and developmental facilities available to the student, the family transportation means, the appliances both for housework and recreation, the availability of work shop and tools, the distance of the school from the home, and the transportation to the school, the number and ages and characteristics of siblings. This should also include the parent's views about the child's abilities, their expectations for the child, and their plans for assisting the child to obtain advanced education or training.

(3) Personal history. This should include such items as moves, age at school entrance, grades repeated or skipped, school marks, special services from the schools, health history, test scores, teacher comments, special developmental activities such as music lessons, work history, personal achievements and recognitions, personal behavior problems, and social problems.

(4) Personal activities. This would include such items as the hours per week spent in study, work, sports, watching TV, listening to radio or recordings, attending movies, social activities, specific hobbies, and recreational reading.

(5) School experience. This would include such items as his interest in his instructional materials in various courses, his motivation to learn in various subjects, his views of the value for him of classroom activities, his views concerning the progress he is making in his own development, his views concerning the worth of the learning activities and goals set by the teacher and the school, his evaluation of special aspects of the school program, and an overall evaluation of his opportunities for educational development.

(6) Personal characteristics. This would include the student's reading level, interests, study skills, and special abilities.

(7) Personal plans. This would include the student's plans with respect to education, career, military service, marriage, children, cultural and leisure time activities, civic responsibilities, and general life goals and values.

Enough case studies are needed to provide a sound basis for modifying and revising the school program. Probably at least one hundred students at a grade level are needed. On the basis of these data, it is believed that the administrator and supervisor can select and devise an educational program which will fit each individual much more appropriately than do current programs. This type of exercise is believed to be the most effective method of bringing to the attention of the school authorities and teachers, the major deficiencies of the present educational program. It should also be very valuable in emphasizing the strengths of the current program so that these are not lost in the efforts to improve the program for certain students.

To improve the quality of educational outcomes a definition of the specific needs of each student is required. These are ever-changing and evolving but decisions must be made now for today's students.